

**§ 77.503-1 Electric conductors.**

Electric conductors shall be sufficient in size to meet the minimum current carrying capacity provided for in the National Electric Code, 1968. All trailing cables shall meet the minimum requirements for ampacity provided in the standards of the Insulated Power Cable Engineers Association—National Electric Manufacturers Association in effect when such cables are purchased.

**§ 77.504 Electrical connections or splices; suitability.**

Electrical connections or splices in electric conductors shall be mechanically and electrically efficient, and suitable connectors shall be used. All electrical connections or splices in insulated wire shall be reinsulated at least to the same degree of protection as the remainder of the wire.

**§ 77.505 Cable fittings; suitability.**

Cables shall enter metal frames of motors, splice boxes, and electric compartments only through proper fittings. When insulated wires, other than cables, pass through metal frames, the holes shall be substantially bushed with insulated bushings.

**§ 77.506 Electric equipment and circuits; overload and short-circuit protection.**

Automatic circuit-breaking devices or fuses of the correct type and capacity shall be installed so as to protect all electric equipment and circuits against short circuit and overloads.

**§ 77.506-1 Electric equipment and circuits; overload and short circuit protection; minimum requirements.**

Devices providing either short circuit protection or protection against overload shall conform to the minimum requirements for protection of electric circuits and equipment of the National Electric Code, 1968.

**§ 77.507 Electric equipment; switches.**

All electric equipment shall be provided with switches or other controls that are safely designed, constructed, and installed.

**§ 77.508 Lightning arresters, ungrounded and exposed power conductors and telephone wires.**

All ungrounded, exposed power conductors and telephone wires shall be equipped with suitable lightning arresters which are adequately installed and connected to a low resistance grounding medium.

**§ 77.508-1 Lightning arresters; wires entering buildings.**

Lightning arresters protecting exposed telephone wires entering buildings shall be provided at the point where each such telephone wire enters the building.

**§ 77.509 Transformers; installation and guarding.**

(a) Transformers shall be of the totally enclosed type, or shall be placed at least 8 feet above the ground, or installed in a transformer house, or surrounded by a substantial fence at least 6 feet high and at least 3 feet from any energized parts, casings, or wiring.

(b) Transformer stations shall be enclosed to prevent persons from unintentionally or inadvertently contacting energized parts.

(c) Transformer enclosures shall be kept locked against unauthorized entry.

**§ 77.510 Resistors; location and guarding.**

Resistors, heaters, and rheostats shall be located so as to minimize fire hazards and, where necessary, provided with guards to prevent personal contact.

**§ 77.511 Danger signs at electrical installations.**

Suitable danger signs shall be posted at all major electrical installations.

**§ 77.512 Inspection and cover plates.**

Inspection and cover plates on electrical equipment shall be kept in place at all times except during testing or repairs.

**§ 77.513 Insulating mats at power switches.**

Dry wooden platforms, insulating mats, or other electrically nonconductive material shall be kept in place at